

Claims

[c1] ~~1 .A lamp comprising:~~
a substrate;
~~a first lighting unit comprising:~~
a first light emitting diode (LED) arranged on the substrate, and
a first lens element having a first optical prescription and being arranged to interact with light produced by the first LED; and
~~a second lighting unit comprising:~~
a second light emitting diode (LED) arranged on the substrate, and
a second lens element having a second optical prescription and being arranged to interact with light produced by the second LED.

[c2] ~~2 .The lamp as set forth in claim 1 , further comprising:~~
a control unit which applies operating power to at least one of the first lighting unit and the second lighting unit.

[c3] ~~3 .The lamp as set forth in claim 1 , further comprising:~~
a control unit having at least two selectable operational modes including:
a first selectable operational mode in which power is applied to the first lighting unit, and
a second selectable operational mode in which power is applied to the second lighting unit.

[c4] ~~4 .The lamp as set forth in claim 3 , wherein the control unit further has:~~
a third selectable operational mode in which power is applied to the first lighting unit and to the second lighting unit.

[c5] ~~5 .The lamp as set forth in claim 1 , wherein:~~
light emission from the first LED has a first spectral distribution; and
light emission from the second LED has a second spectral distribution that is different from the first spectral distribution.

[c6] ~~6 .The lamp as set forth in claim 1 , wherein:~~
at least one of the first lens element and the second lens element includes a tinted region whereby the spectral distribution of the light emission of the at

least one lighting unit that includes the tinted region is altered in a pre-selected manner by the tinted region.

[c7] 7. A light source having a selectable light output, the light source comprising:
a substrate; and
a plurality of optical sources arranged on the substrate, each optical source including:
a light emitting diode, and
an optical element in operative communication with the light emitting diode and having a pre-defined optical prescription,
said plurality of optical sources being selectively operable to produce light having selected light output characteristics.

[c8] 8. The light source as set forth in claim 7, wherein the selective operation of the plurality of optical sources includes at least one of:
selectively operating one of the plurality of optical sources;
selectively operating a sub-set of the plurality of optical sources; and
selectively operating all of the plurality of optical sources.

[c9] 9. The light source as set forth in claim 7, wherein the selected light output characteristics include selected spatial light output patterns.

[c10] 10. The light source as set forth in claim 7, wherein the selected light output characteristics include selected angular distributions of the emitted light.

[c11] 11. The light source as set forth in claim 10, wherein the selected light output characteristics include selected light colors.

[c12] 12. The light source as set forth in claim 7, further comprising:
a control unit that operates selected optical sources producing a spatial and angular distribution of the light source output.

[c13] 13. The light source as set forth in claim 12, wherein the control unit further includes:
electrical circuitry that conditions the power applied to at least one of the first optical source and the second optical source.

[c14] 14 .The light source as set forth in claim 7, wherein:
the optical element includes a first lens element formed according to the pre-defined optical prescription.

[c15] 15 .In an LED light source comprising a plurality of light emitting diodes disposed on a substrate each in optical communication with a lens, a method of varying light patterns produced by the LED light source comprising:
selecting a first set of the plurality of light emitting diodes;
powering light emitting diodes in the first set of light emitting diodes;
passing light emitted by each of the powered light emitting diodes in the first set through lenses integral with each of the powered light emitting diodes in the first set producing a first angular distribution of light;
selecting a second set of the plurality of light emitting diodes;
powering light emitting diodes in the second set of light emitting diodes; and
passing light emitted by each of the powered light emitting diodes in the second set through lenses integral with each of the powered light emitting diodes in the second set producing a different angular distribution of light.

[c16] 16 .The method as set forth in claim 15 , further comprising depowering at least selected light emitting diodes in the first set prior to powering the light emitting diodes in the second set.

[c17] 17 .The method as set forth in claim 15 , further comprising altering a wavelength associated with the different angular distribution of light such that the different angular distribution of light comprises a color different than the first angular distribution of light.

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